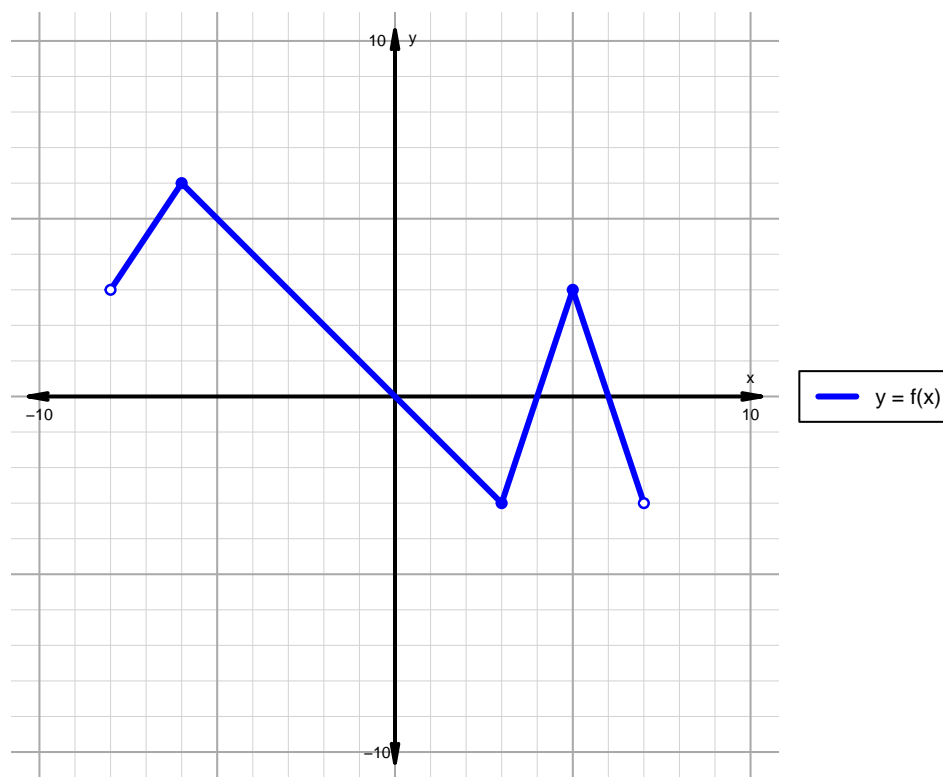


Name: \_\_\_\_\_

Date: \_\_\_\_\_

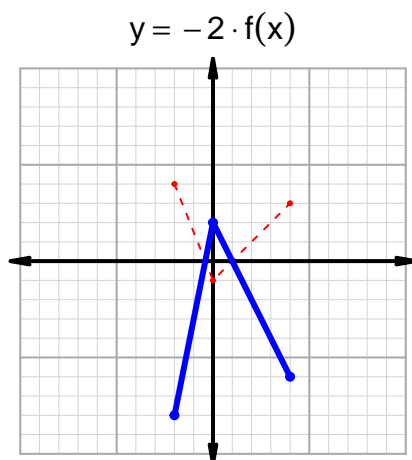
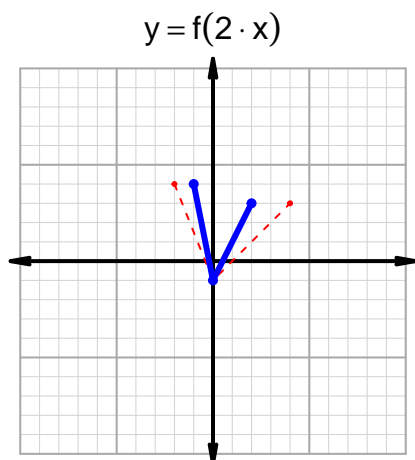
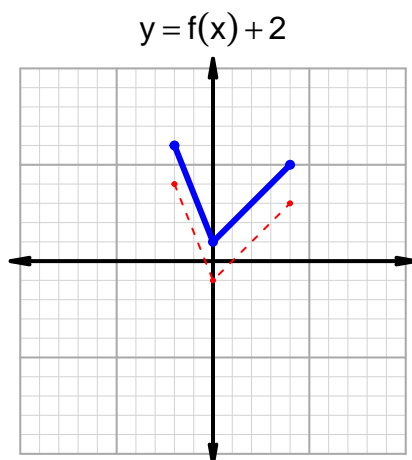
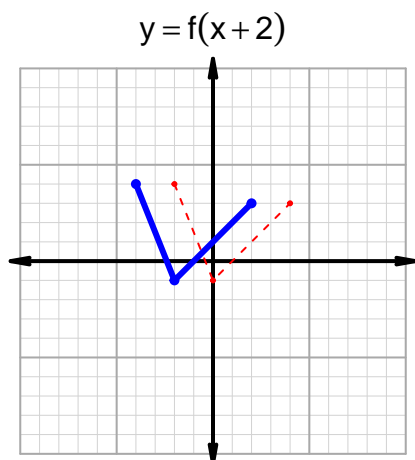
**Intervals, Transformations, and Slope Solution (version 30)**1. The function  $f$  is graphed below.

Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-8, 0) \cup (4, 6)$
Negative	$(0, 4) \cup (6, 7)$
Increasing	$(-8, -6) \cup (3, 5)$
Decreasing	$(-6, 3) \cup (5, 7)$
Domain	$(-8, 7)$
Range	$(-3, 6)$

## Intervals, Transformations, and Slope Solution (version 30)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 21$  and  $x_2 = 33$ . Express your answer as a reduced fraction.

$x$	$g(x)$
21	49
33	64
49	33
64	21

$$\frac{f(33) - f(21)}{33 - 21} = \frac{64 - 49}{33 - 21} = \frac{15}{12}$$

The greatest common factor of 15 and 12 is 3. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{5}{4}$$